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Test 1420: International 5288 Diesel 18-Speed

Tractor Museum
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NEBRASKA TRACTOR TEST 1420 — INTERNATIONAL 5288 DIESEL 18 SPEED

POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temperature °F (°C) Cooling medium	Air wet bulb	Air dry bulb	Barometer inch Hg (kPa)
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—1005 rpm)								
162.60 (121.25)	2400	10.120 (38.308)	0.429 (0.261)	16.07 (3.165)	188 (86.4)	50 (10.2)	75 (23.8)	29.177 (98.525)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
141.13 (105.24)	2451	9.173 (34.724)	0.448 (0.272)	15.39 (3.031)	187 (85.8)	51 (10.3)	74 (23.3)	....
0.00 (0.00)	2646	3.339 (12.639)	....	....	182 (83.3)	51 (10.3)	75 (23.6)	....
73.66 (54.93)	2557	6.278 (23.765)	0.587 (0.357)	11.73 (2.311)	184 (84.4)	51 (10.6)	76 (24.2)	....
162.12 (120.89)	2400	10.109 (38.267)	0.430 (0.261)	16.04 (3.159)	189 (86.9)	51 (10.6)	76 (24.2)	....
37.41 (27.90)	2606	4.802 (18.178)	0.885 (0.538)	7.79 (1.535)	182 (83.3)	51 (10.6)	75 (23.9)	....
108.20 (80.68)	2508	7.719 (29.220)	0.492 (0.299)	14.02 (2.761)	184 (84.2)	51 (10.6)	75 (23.6)	....
Av 87.09 *Av (64.94)*	**2528**	**6.903** *(26.131)*	**0.546** *(0.332)*	**12.62** *(2.485)*	**184** *(84.7)*	**51** *(10.4)*	**75** *(23.8)*	**29.107** *(98.289)*

DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank-shaft speed rpm	Slip %	Fuel Consumption gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) Cool-ing med	Air wet bulb	Air dry bulb	Barom. inch Hg (kPa)
Maximum Available Power—Two Hours 9th (M3) Gear											
137.63 (102.63)	9801 (43.60)	5.27 (8.47)	2399	3.07	10.049 (38.041)	0.503 (0.306)	13.70 (2.698)	180 (82.2)	46 (7.8)	51 (10.3)	28.495 (96.223)
75% of Pull at Maximum Power—Ten Hours 9th (M3) Gear											
111.43 (83.09)	7605 (33.83)	5.49 (8.84)	2485	2.30	8.729 (33.042)	0.540 (0.328)	12.77 (2.515)	178 (81.2)	33 (0.3)	36 (2.3)	28.973 (97.837)
50% of Pull at Maximum Power—Two Hours 9th (M3) Gear											
76.85 (57.31)	5092 (22.65)	5.66 (9.11)	2541	1.56	7.147 (27.054)	0.641 (0.390)	10.75 (2.118)	176 (79.7)	42 (5.6)	46 (7.8)	28.770 (97.152)
50% of Pull at Reduced Engine Speed—Two Hours 13th (H1) Gear											
76.64 (57.15)	5083 (22.61)	5.65 (9.10)	1524	1.51	5.333 (20.188)	0.480 (0.292)	14.37 (2.831)	176 (80.0)	46 (7.5)	53 (11.7)	28.760 (97.118)
MAXIMUM POWER IN SELECTED GEARS											
117.48 (87.60)	17577 (78.19)	2.51 (4.03)	2431	14.27	5th (L5) Gear			181 (82.5)	56 (13.3)	65 (18.3)	28.410 (95.936)
136.62 (101.88)	16175 (71.95)	3.17 (5.10)	2400	6.59	6th (L6) Gear			181 (82.5)	56 (13.3)	65 (18.3)	28.400 (95.903)
141.22 (105.31)	13775 (61.28)	3.84 (6.19)	2399	4.57	7th (M1) Gear			181 (82.5)	56 (13.3)	65 (18.3)	28.400 (95.903)
141.14 (105.25)	11589 (51.55)	4.57 (7.35)	2398	3.57	8th (M2) Gear			181 (82.8)	56 (13.3)	63 (17.2)	28.390 (95.869)
142.37 (106.16)	10133 (45.08)	5.27 (8.48)	2399	2.90	9th (M3) Gear			181 (82.8)	55 (12.8)	60 (15.6)	28.380 (95.835)
140.74 (104.95)	8494 (37.78)	6.21 (10.00)	2398	2.64	10th (M4) Gear			181 (82.8)	56 (13.3)	65 (18.3)	28.400 (95.903)
139.32 (103.89)	7201 (32.03)	7.26 (11.68)	2399	2.12	11th (M5) Gear			182 (83.3)	55 (12.8)	64 (17.8)	28.410 (95.936)
136.23 (101.59)	5968 (26.55)	8.56 (13.78)	2400	1.77	12th (M6) Gear			181 (82.5)	55 (12.8)	64 (17.8)	28.410 (95.936)

LUGGING ABILITY IN 9th (M3) GEAR

Crankshaft Speed rpm	2399	2158	1919	1675	1426	1201
Pull—lbs (kN)	10133 (45.08)	11420 (50.80)	12410 (55.20)	12936 (57.54)	12297 (54.70)	11250 (50.04)
Increase in Pull %	0	13	22	28	21	11
Power—Hp (kW)	142.37 (106.16)	143.57 (107.06)	138.20 (103.06)	125.32 (93.45)	101.66 (75.81)	78.69 (58.68)
Speed—Mph (km/h)	5.27 (8.48)	4.71 (7.59)	4.18 (6.72)	3.63 (5.85)	3.10 (4.99)	2.62 (4.22)
Slip %	2.90	3.41	3.91	4.24	3.91	3.41

Department of Agricultural Engineering

Dates of Test: November 13-24, 1981

Manufacturer: INTERNATIONAL HARVESTER COMPANY, 401 North Michigan Avenue, Chicago, IL 60611

FUEL, OIL AND TIME: Fuel No. 2 Diesel **Cetane No.** 46.3 (rating taken from oil company's inspection data) **Specific gravity converted to 60°/60° *(15°/15°)*** 0.8276 **Fuel weight** 6.891 lbs/gal *(0.826 kg/l)* **Oil SAE** 30 **API service classification** CD/SE **To motor** 4.156 gal *(15.731 l)* **Drained from motor** 3.547 gal *(13.428 l)* **Transmission and final drive lubricant** I.H. Hytran fluid **Total time engine was operated** 40.5 hours

ENGINE: Make International Diesel **Type** six cylinder vertical with turbocharger **Serial No.** 467TT2U160101* **Crankshaft** lengthwise **Rated rpm** 2400 **Bore and stroke** 4.30″ × 5.35″ *(109.2 mm × 135.9 mm)* **Compression ratio** 15.4 to 1 **Displacement** 466 cu in *(7636 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements with aspirator **Oil filter** two full flow cartridges **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper cartridges **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat.

CHASSIS: Type standard with duals **Serial No.** 2580002U000942* **Tread width** rear 64″ *(1625 mm)* to 128″ *(3250 mm)* front 62.5″ *(1588 mm)* to 86.5″ *(2197 mm)* **Wheel base** 111.6″ *(2835 mm)* **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 27.3″ *(693 mm)* Vertical distance above roadway 38.9″ *(988 mm)* Horizontal distance from center of rear wheel tread 0″ *(0 mm)* to the right/left **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Advertised speeds mph *(km/h)*** first 1.5 *(2.4)* second 1.7 *(2.8)* third 2.0 *(3.2)* fourth 2.3 *(3.8)* fifth 2.7 *(4.4)* sixth 3.2 *(5.2)* seventh 3.8 *(6.1)* eighth 4.5 *(7.2)* ninth 5.1 *(8.3)* tenth 6.0 *(9.7)* eleventh 7.0 *(11.3)* twelfth 8.2 *(13.3)* thirteenth 8.5 *(13.7)* fourteenth 10.0 *(16.1)* fifteenth 11.5 *(18.6)* sixteenth 13.5 *(21.7)* seventeenth 15.6 *(25.2)* eighteenth 18.4 *(29.6)* reverse 2.9 *(4.6)*, 3.3 *(5.4)*, 3.8 *(6.2)*, 4.5 *(7.3)*, 5.2 *(8.4)*, 6.1 *(9.9)* **Clutch** multiple wet disc operated by foot pedal with hydraulic power assist **Brakes** multiple wet disc hydraulically power actuated and operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 151.1″ *(3.84 m)* left 151.1″ *(3.84 m)* (on concrete surface without brake) right 199.5″ *(5.07 m)* left 199.5″ *(5.07 m)* **Turning space diameter** (on concrete surface with brake applied) right 316″ *(8.03 m)* left 316″ *(8.03 m)* (on concrete surface without brake) right 412.8″ *(10.49 m)* left 412.8″ *(10.49 m)* **Power take-off** 1005 rpm at 2400 engine rpm.

REPAIRS and ADJUSTMENTS: No repairs or adjustments.

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum Available Power—Two Hours	77.0
75% of Pull at Maximum Power—Ten Hours	77.5
50% of Pull at Maximum Power—Two Hours	77.5
50% of Pull at Reduced Engine Speed—Two Hours	73.5
Bystander in 18th (H6) gear	86.0

TIRES, BALLAST AND WEIGHT		With Ballast	Without Ballast
Rear Tires	—No., size, ply & psi *(kPa)*	Inner two 20.8R38; 10; 12 *(85)* Outer two 20.8R38; 8; 12 *(85)*	Inner two 20.8R38; 10; 12 *(85)* Outer two 20.8R38; 8; 12 *(85)*
Ballast	—Liquid (each inner)	760 lb *(345 kg)*	None
	—Cast Iron (each)	None	None
Front Tires	—No., size, ply & psi *(kPa)*	Two 14L-16.1; 6; 28 *(195)*	Two 14L-16.1; 6; 28*(195)*
Ballast	—Liquid (each)	None	None
	—Test equip. (each)	5 lb *(2 kg)*	None
Height of Drawbar		20.5 in *(520 mm)*	20.5 in *(520 mm)*
Static Weight with Operator—Rear		14425 lb *(6543 kg)*	12905 lb *(5854 kg)*
—Front		4160 lb *(1887 kg)*	4150 lb *(1882 kg)*
—Total		18585 lb *(8430 kg)*	17055 lb *(7736 kg)*

REMARKS: All test results were determined from observed data obtained in accordance with SAE and ASAE test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 128°F *(53.3°C)*. Eight gears were chosen between 15% slip and 10 mph *(16.1 km/h)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1420.**

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Engineer-in-Charge

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International 5288 Diesel

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